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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,171	04/09/2004	Raphael Schlanger	01-396-C	2923

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EXAMINER

BELLINGER, JASON R

ART UNIT	PAPER NUMBER
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3617

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/822,171	Applicant(s) SCHLANGER, RAPHAEL	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 114-176 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 114-129, 131, 134, 135, 141, 142, 150, 156, 161, 166-171 and 176 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 130,132,133,136-140,143-149,151-155,157-160,162-165 and 172-175.

Election/Restrictions

1. Applicant's election without traverse of species IA, drawn to Figures 4a-c, in the reply filed on 23 January 2006 is acknowledged.

2. Claims 130, 132-133, 136, 138-140, 143-149, 151-155, 157-160, 162-165, and 175 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 23 January 2006.

It should further be noted that claims 137 and 172-174 have been withdrawn from consideration, due to the fact that these claims are also drawn to nonelected species. Claim 137, as best understood, corresponds to Figures 8a-b, while claim 172 corresponds to Figure 13c, and claims 173-174 correspond to Figures 14a-b.

Specification

3. The abstract of the disclosure is objected to because it contains legal terminology (see below). Correction is required. See MPEP § 608.01(b).

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The disclosure is objected to because of the following informalities: In line 22 of page 14, reference to Figure "9a" should be replaced with --9b-- to correspond to the drawings.

Appropriate correction is required.

Claim Objections

6. Claims 166 and 169 are objected to because of the following informalities: Claim 166 is objected to due to the fact that it is unclear whether the claim is incomplete, since it ends in a semi-colon. The semi-colon at the end of claim 166 should be replaced with a period.

The term "though" should be replaced with the term --through-- in line 3 of claim 169.

These corrections for are minor spelling and/or grammatical errors. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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8. Claims 127-128, 137, 170, and 176 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The term "softer" in claims 127-128 is a relative term, which renders the claim indefinite. The term "softer" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. No qualitative or quantitative limitations has been set forth to describe the term "softer" in the claims.

10. The term "harder" in claim 128 is a relative term, which renders the claim indefinite. The term "harder" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. No qualitative or quantitative limitations has been set forth to describe the term "harder" in the claim.

11. The term "close" in claim 170 is a relative term, which renders the claim indefinite. The term "closer" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. No qualitative or quantitative limitations has been set forth to describe the term "close" in the claim.

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12. The term "firm" in claim 176 is a relative term, which renders the claim indefinite. The term "firm" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. No qualitative or quantitative limitations has been set forth to describe the term "firm" in the claim.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson.

Wilson shows a wheel having a peripheral wheel rim **B**, and a central hub **A** having a central axle and outer flange **F**. A plurality of spokes **D** extend between the rim **B** and hub **A**, with the spokes having a first portion connected to the rim **B** and a second portion opposed to the first portion and connected to the hub **A**. A cavity is formed within the flange **F** for connection with at least one of the spokes **D**.

A second portion of the spoke **D** is joined to the outer flange **F** by means of a deformed engagement, wherein the spoke **D** deforms the cavity. The deformed engagement results in a connection that resists relative movement between the cavity and the second portion of the spoke **D** in the engagement region. The cavity is in a

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polymeric material that includes reinforcement fibers (namely the hub flange **F**). The deformed engagement region is entirely within the cavity, and the flange **F** includes a plurality of deformed engagement regions (namely, one for each spoke **D**).

The second portion of the spokes **D** is coupled to the flange by an interference fit, and is joined to the cavity to maintain the cavity in a deformed condition. The second portion of the spoke **D** is of a material with a hardness greater than that of the cavity (due to the fact that the spokes are formed from a metal, while the cavity is formed in an outer flange that is formed from a reinforced polymer; see column 3, lines 31-34). The deformed engagement region includes contact between the spoke **D** and the cavity around the full cross-sectional perimeter of the spoke **D**.

The cavity is a blind cavity having at least one open end, closed longitudinal sides, and a closed bottom (that provides a longitudinal depth stop for the spoke). The deformed engagement includes elastic deformation (namely the cavity elastically deforms around the spoke **D** as it is threaded into the flange **F**).

The spoke **D** includes a configured surface, namely including helical threads in the deformed engagement region, and thus resists being pulled out of the cavity from plastic and elastic deformation. The spokes **D** are formed is a generally straight span portion that extends between the flange **F** and the rim **B**. This spoke span portion has a longitudinal axis that is aligned generally collinear with the longitudinal axis of the deformed engagement region.

The cavity includes at least one open end and at least one longitudinal sidewall surface. The deformed engagement extends longitudinally, and is continuous across the

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longitudinal sidewall surface of the cavity. The longitudinal distance of the cavity is greater than the cross-sectional thickness of the spoke **D**. The engagement region has a longitudinal depth that is at least 2x greater than the cross-sectional thickness of the spoke **D**. The spoke **D** may be disassembled from, and reassembled to, the cavity without damaging the cavity.

Multiple deformed engagement regions correspond to multiple cavities, due to the presence of multiple spokes **D**. The deformed engagement region in the cavity provides a "firm" connection between the spoke **D** and the flange **F**.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 115 and 119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson. Wilson contains all of the limitations as set forth in paragraph 14 above, but does not specify that the spokes are pre-tensioned. It is well known in the art that tension spokes wheels are constructed by securing spokes first to either a rim of a hub, and then connecting the spokes to the hub or rim (dependent upon which element the spokes were connected to first). It is well known in the art to pre-tension the spokes when attaching the spokes to the first element (i.e. the rim or hub). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to pre-

tension the spokes of Wilson in order to equalize the forces of the wheel during construction.

Wilson does not state that the cavity is preformed. It is well known in the art to perform spoke attachment cavities in a hub or rim in order to reduce the effort required to thread (or secure) the spokes to the rim or hub. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to perform the cavities in the hub flange of Wilson for the reason set forth immediately above.

17. Claims 116-118 rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson as applied to claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 above, and further in view of Lacombe et al. Wilson does not show the wheel including means to pretension to spoke and/or selectively adjusting the pretension of the spoke.

In Figure 1, Lacombe et al teaches the use of a spoke 1 having a tension adjustment device 5 located at one end of a spoke; this tension adjustment means 5 being capable of selectively adjusting pre-tension in the spoke 1. The device includes threadable adjustment means (6-7).

Therefore from this teaching, it would have been obvious to one of ordinary skill at the time of the invention to provide Wilson with a spoke having a tension adjustment device at the rim connection end of the spoke in order to allow for adjustment of the tension of the spokes. This would allow all the spokes to be adjusted to provide a

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balanced wheel, which would have an increased life and superior ride over an unbalanced wheel.

18. Claims 122 and 135 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson as applied to claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 above, and further in view of Thompson, Jr. Wilson does not disclose that the hub (in which the cavity is located) is formed of a thermoplastic material.

Thompson, Jr. teaches the use of a bicycle hub made from a thermoplastic polymeric material. Therefore from this teaching, it would have been obvious to one of ordinary skill at the time of the invention to provide Wilson with a hub made from a thermoplastic polymeric material, as a substitution of equivalent polymeric materials, dependent upon cost and availability.

The spokes **D** of Wilson as modified by Thompson, Jr. would then cause plastic deformation when threaded into the cavities in the flange **F**.

19. Claims 169-171 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson as applied to claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 above, and further in view of Watson. Wilson does not show the deformed engagement region extending obliquely and are radially offset from the central axial axis of the axle, wherein the deformed engagement region extends through

an imaginary radial line perpendicular to the axial central axis of the hub, and perpendicular to a longitudinal axis of the cavity.

Watson teaches the use of a hub 12 having spoke engagement regions 29 that cross over each other in axial plan view and in “close” proximity of each other at an angle of less than 180 degrees. These engagement regions 29 extend obliquely, and are radially offset from the central axial axis of an axle 14, wherein the engagement regions 29 extend through an imaginary radial line perpendicular to the axial central axis of the hub 12, and perpendicular to a longitudinal axis of the spoke mounting cavities 20.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the deformed engagement regions of the wheel of Wilson in the manner taught by Watson, as a substitution of equivalent spoke mounting arrangement, dependent upon the type of application in which the wheel would be used, and to further reinforce the hub by having the spoke ends overlap each other in the axial direction of the hub.

Double Patenting

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

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1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

21. Claims 114-115; and 114-115, 117, 119 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1; and 9-10, respectively of U.S. Patent No. 6,899,401. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims contain all of the limitations set forth in the patented claims, but in broader terms. Therefore, it is obvious that the same invention is being claimed in broader terms.

Conclusion

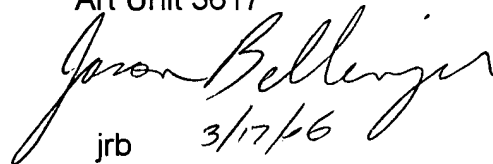
22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references are considered to show wheels having spokes engaging cavities in a hub. For example, Green shows a wheel of the type described above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason R Bellinger
Examiner
Art Unit 3617


jrb 3/17/16